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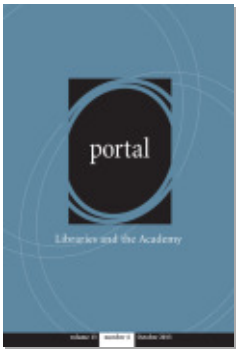

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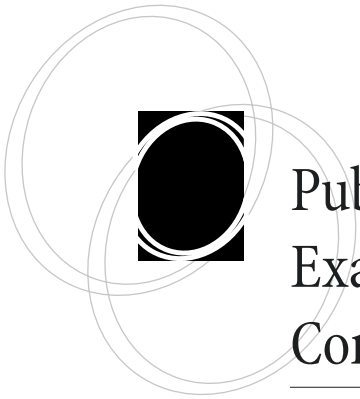

Publish or Practice? An Examination of Librarians' Contributions to Research

S. Craig Finlay, Chaoqun Ni, Andrew Tsou, Cassidy R. Sugimoto

abstract: This article examines authorship of LIS literature in the context of practitioner and non-practitioner production of published research. For this study, 4,827 peer-reviewed articles from twenty LIS journals published between 1956 and 2011 were examined to determine the percentage of articles written by practitioners. The study identified a decrease in the proportion of articles authored by practitioners between 2006 and 2011. Topic analysis of articles revealed subtle yet distinct differences in research subject matter between practitioner-authored and non-practitioner-authored articles. If present trends continue, the character of LIS literature may shift away from many issues relating to practical librarianship.

Introduction

Appreciating the population demographics of authors publishing within a discipline is crucial to an understanding of the discipline itself. Documenting authorship of scholarly literature within a field allows researchers to assess "sources of strength in research and scholarship and the field's pace among other disciplines."[1] In library and information science (LIS), there is evidence of a trend of fewer librarian-authored research articles being contributed to the literature.[2] If this trend continues, the domain of LIS, as defined by its collective scholarly output, could look very different over the next two decades. By virtue of their everyday work experience, practitioners (that is, librarians and archivists) bring a different perspective to the literature than that of academics (that is, LIS professors and doctoral students). In fact, the editors of the *Journal of Information Science and Technology* found this dichotomy sufficiently striking that in 2004 they instituted a separate process for review of practitioner research. The new process took into account the additional time required for research

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that investigates practice-oriented problems. Associate editor Steven John Simon wrote in an accompanying editorial that the project's "goal is to create a forum that will be shared by ALL members of our community … It is our deepest hope that we will all learn from each other."[3]

It has been suggested that librarians need not conduct research, instead focusing their energies on performing the traditional duties ascribed to librarians. In 1979, as faculty status was increasingly common for academic librarians, Roger Mortimer and Nelson Beck opined with Hitchensian glee that:

> Interminable reader-use surveys may be of considerable local interest, but do we really need to publish quite so many of them? Published questionnaires tabulating the views of other librarians on the topic of faculty status can always, of course, serve to pad our own tenure files, and articles that "grade the foulness of *your* director of libraries on a scale of one to ten" can be most entertaining. Such pieces do little to enhance our general academic standing.[4]

Such a position discounts outright the possibility that conducting research and engaging in the creation of new knowledge may in fact be invaluable to a librarian's professional development. As Robert Swisher wrote, "research is not a process that is the responsibility of others; research is a way of knowing, a way of making better practical decisions that is the responsibility of each of us."[5]

Research Questions

Whether one is an advocate for practitioner authorship, the importance of understanding the current state of a discipline through its contributors should remain self-evident. Toward this end, to gain a more holistic understanding of the demographic of LIS research and the implications of its evolution, this study seeks to answer the following questions:

1. How stable has the proportion of librarian authors been since 1955? This will indicate whether the decrease observed by Ann Weller, Julie Hurd, and Stephen Wiberly is a trend or anomaly.[6]
2. Would a decrease in the proportion of librarian authors alter the topicality of LIS literature? If librarians are found to consistently write about topics different from those of most frequently researched non-librarian authors, then we may propose that a loss of practitioner authors would impoverish the literature in that regard.
3. How well-cited are librarians as compared to non-librarian authors? How frequently do librarian authors cite non-librarian authors and vice versa? Such findings would inform our knowledge of the dynamics of the LIS publishing community.

Literature Review

A number of recent studies have examined variations in the scholarly practices of practitioners as opposed to those of academics; practitioners tend to focus on practical, problem-based topics, while academics tend to focus on the theoretical.[7] Michael Bolton

and Gregory Stolcis, when comparing practitioner and academic research in law enforcement, argued that academic research tends not to be concerned with best practice:

> Academics are trained to generate knowledge in their respective disciplines, not necessarily to solve organizational problems. This tendency does not lend itself to conducting research that concerns itself with practical problems.[8]

This disparity in research needs and interests may help explain Charles Hildreth and Selenay Aytac's finding that collaboration between academics and practitioners is rare: in a survey of 206 LIS articles, collaboration between librarian and LIS instructional faculty authors accounted for less than ten percent of the sample.[9]

Several researchers have noted that librarians primarily access scholarship pertaining to day-to-day library services rather than theory.[10] Gaby Haddow and Jane Klobas wrote that such a tendency has led to practitioners being "criticized for their focus on operational or day-to-day information, and ignorance, or at best, a lack of interest in research."[11] This may be indicative of differing priorities between the two groups, particularly in the context of Kathlyn Turner's 2002 survey of librarians' usage of LIS literature that found that "the perceived inadequacy of research to address practical workplace problems was a major reason for information professionals not consulting the research."[12]

It is not only the types of research that separate practitioners and LIS academics, but also the venues in which they publish and the nature of citations to and references from articles in such venues. Christian Schlogl and Wolfgang Stock found that practitioner-dominated LIS journals had a much lower citation half-life than their more theoretical information science counterparts, suggesting that "practitioners are mainly interested in receiving quick up-to-date information. Articles with long lists of references are usually not demanded since practitioners may not have the time to perform an extensive literature review in many cases."[13] Indeed, it was recently confirmed that practitioner-authored articles tend to have shorter reference lists than articles authored by academics.[14]

It is not only the types of research that separate practitioners and LIS academics, but also the venues in which they publish and the nature of citations to and references from articles in such venues.

If librarians tend to both author and access primarily practice-focused journal articles, then a decrease in librarian-authored literature can be expected to have important implications for the profession. In 1999, Weller, Hurd, and Wiberly examined the number of contributions by academic librarians to peer-reviewed literature between 1993 and 1997. The trio painted a rosy picture of academic librarian publishing, writing that:

> Academic librarians are contributing a very significant proportion of the LIS literature. The proportion of contributions by academic librarians to the scholarly literature may be increasing. Although the data are limited, it appears that academic librarians who publish do so as frequently as LIS instructional faculty in general.[15]

Upon revisiting the subject seven years later, the authors surveyed the relevant literature for the time period 1998–2002, finding across-the-board declines in the number and pro-

portion of peer-reviewed articles written by academic librarians, as well as a decrease in the number of academic librarian authors as a whole. Specifically, the number of articles written by academic librarians was found to have declined by nearly thirteen percent.[16] While the study was insufficiently broad to determine whether this was part of a long term trend or a temporary anomaly, the authors did determine that the drop was not due to a decline in the number of academic librarians. They also found that librarian authors were much less likely to collaborate with instructional faculty than with other librarians. One possible reason for this comes from David Fox's recent survey of Canadian librarians, which found that only thirteen percent of the librarians considered themselves to be "active scholars." Fox also observed that "most universities have not provided their librarians with either formal or informal guidelines concerning an appropriate time commitment to scholarship."[17]

A pair of studies conducted in the 1970s indicated that a gap in productivity may have already been forming at that time. Virgil Massman surveyed 224 librarians and 205 instructional faculty members in three Midwestern states, comparing their publishing productivity, and found that instructional faculty members were more productive, publishing an average of 1.7 articles per person over a 2-year period, compared to the .7 articles published per librarian over the same length of time. Similarly, Paula De Simone Watson studied the publication activity of librarians at ten research universities and concluded that librarians were less likely to publish than their instructional faculty counterparts, publishing an average of less than one article per year. Watson also found that the newest librarians were less likely to publish than more established librarians were, indicating a possible trend. [18]

A 2010 survey of LIS researchers by Klobas and Laurel Clyde showed a marked disparity in the academic culture of the two groups; where 96 percent of full professors responded that they felt they were expected and encouraged to research and publish, only 19 percent of librarians felt the same way. In addition, 54 percent of practitioners felt that they were neither expected nor encouraged to publish, compared with 0 percent of full professors. Practitioners also indicated a lack of a reward system for publishing in their respective institutions. [19]

Amid this alleged limited support for librarian research production, a debate continues over whether the requirement to publish at all is fair for librarians, considering their regimented, year-round, forty-hour work week, and various service requirements.[20] A number of individuals have argued that the reality of a working librarian's schedule is not conducive to conducting research. Such constraints should not be news to any academic librarian; in 1990, John Cosgriff, Donald Kenney, and Gail McMillan surveyed 97 Association of Research Libraries (ARL) libraries and found that while academic libraries requiring publication for granting tenure offered more opportunities for time off to conduct research, the twelve-month schedule of librarians was still a hindrance to productivity.[21] Barbara Floyd and John Phillips conducted a survey of academic librarians and found that the most consistent worry on the part of librarians was that "the requirement to publish in order to be a successful academic often competes with the requirement to perform daily work in order to be a successful librarian."[22] In addition, librarians consistently responded that they were not provided with sufficient blocks of time to conduct research. Jeanne Brown suggested the use of time logs by librarians in

order to allocate small blocks of time each day to do research and that librarians should be assured that "we do have time: not enough to do everything we'd like to do, but time nonetheless to allocate as we see fit."[23]

The issue of tenure, and whether librarians were experiencing difficulty gaining it, was addressed by Bede Mitchell and Mary Reichel, who surveyed 690 universities on the issue.[24] At the heart of the matter is the ACRL "Joint Statement Regarding Faculty Status for Academic Librarians," which holds that:

> Faculty status entails for librarians the same rights and responsibilities as for other members of the faculty. They should have corresponding entitlement to rank, promotion, tenure, compensation, leaves, and research funds. … Faculty librarians should go through the same process of evaluation as other faculty members.[25]

Nevertheless, Mitchell and Reichel found librarians were able to gain tenure through community and library service in lieu of prolific publishing. This would seem to support Klobas and Clyde's findings. In fact, Mitchell and Stanislava Swieszkowski found that academic librarians were more likely to gain tenure than professors were. Karen Smith and Gemma DeVinney conducted a survey of 526 academic librarians at 33 universities and found that 47 percent were granted tenure without any publications. It is the flip side of the coin described by Shalu Gillum, who suggested that one of the explanations for the decrease in librarian authorship was the decision of many universities to do away with librarian tenure all together. Gillum argued that "without the lure of promotion and tenure, there is little motivation for librarians to contribute to the body of LIS literature."[26]

Joseph Fennewald found that a recurring theme motivating those academic librarians who do publish was the belief that "the importance of research is to identify new knowledge that will enhance practice."[27] Advocates for continued librarian scholarship echo this theme. Christopher Stewart wrote that as the responsibilities of academic librarians have expanded to include "teaching, content management and development, and even data curation, it has become more important for librarians to engage in scholarship."[28]

A loss of practitioner-authored contributions to the literature will necessarily change its overall character. A decrease in librarian-conducted research could also adversely affect librarians' job performance. Gillum pointed out that "conducting research and scholarly writing deepens one's knowledge of the subject matter being researched, resulting in enhanced provision of information."[29] In short, conducting research increases knowledge in a way that simply reading cannot, and increased knowledge cannot help but translate into better practice. As Peter Hernon and Candy Schwartz have said:

A loss of practitioner-authored contributions to the literature will necessarily change its overall character.

> Research is not an activity that occurs at the fringes of the field. Rather, it is central to the continued development of library and information science as a profession or discipline represented by graduate programs within academia.[30]

Methods

Selection of Journals

The sampling frame for this study was the list of journals created by Thomas Nisonger and Charles Davis.[31] Nisonger and Davis surveyed deans, directors, and department chairs of American Library Association (ALA)-accredited LIS programs and directors of ARL libraries regarding the prestige and importance of certain LIS journals for promotion and tenure at their institution. The results of the study provided two ranked lists of journals, one from the perspective of the deans of LIS schools and one from the directors of ARL libraries. We identified the twenty highest ranked journals from each perspective, for a list of 29 unique journals. Journals not indexed by Web of Science (WoS) were excluded, as were monograph series, leaving a total of 19 journals (see Appendix A).

Selection of Articles

Full bibliographic information (title, abstract, authors, cited references, etc.) was downloaded from WoS for all articles published in these twenty journals from 1956 to 2010 (or for the duration that they were in existence and indexed by ISI, if later than 1955). Name changes for all journals were included (for example, *American Documentation*, *Journal of the American Society for Information Science*, and *Journal of the American Society for Information Science and Technology* were all aggregated into a single journal). Although WoS distinguishes among article types (for example, review, editorial, research), there is some error in this classification scheme. Therefore, to further limit the study to research articles only, any article with no cited references was eliminated.

Systematic sampling was employed in order to select a smaller number of articles to code. All articles from the first issue of each journal for each year were selected. Although it is possible that these could have contained special issues, there is no reason to believe that the first issue of each year is systematically different from other issues over the course of the journal. After this sampling method (and employing the exclusion criteria listed above), 4,827 articles remained for analysis. However, the selected journals published with different frequencies (that is, quarterly, bi-monthly, and monthly). If each journal's output is evenly distributed among the issues published each year, then the first issue of a quarterly accounts for 25 percent of the journal's annual output. In contrast, the first issue of a bimonthly accounts for 16.7 percent of the journal's annual output, and the first issue of a monthly accounts for 8.3 percent. To provide reliable estimates for the set of all articles published during the period of the study, we therefore weighted the article counts for those journals that published more often than quarterly. Specifically, the values for bimonthly journals were weighted by a factor of 1.5 and the values for monthly journals were weighted by a factor of 3.0.

Coding of Author Affiliation

Each of the 4,827 articles were examined to determine the affiliation of the authors. Coding followed a simple scheme in which each article was classified in one of three categories: 1) articles written solely by one or more individuals employed primarily in a library/archive setting; 2) articles written by at least one author employed primarily

in a library/archive setting and at least one other author not employed primarily in a library/archive setting; 3) articles written solely by one or more individuals not primarily employed in a library/archive setting. Initial coding was done using the affiliation information provided in the WoS records, provided that the data included details on the level of the unit that made classification possible (for example, "Harvard Univ Lib" or "Sch of Lib & Info Sci"). Some journals were more likely to provide this level of detail than others. After this initial classification, physical and digital copies of the articles were obtained and examined for affiliation data in the index or accompanying data for each article. When no information could be found in the journals, bibliographic reference books were consulted (for example, *Who's Who in Library and Information Services*). In addition, online curriculum vitae and bibliographies were used to identify a given author's employment venue at the time of an article's publication. Sufficient information for coding was identified for 99 percent of the sample (n=4,772); that is, only 55 articles could not be coded after these search strategies were employed.

Affiliation Analysis

Authors' affiliations were examined to determine the contributions and collaborative behavior of librarians and non-librarians for each of the twenty journals and for each of the twelve five-year periods. This provided a detailed description of both the proportion of librarian-contributed literature over time and the sites at which librarians most often chose to publish their research. In addition, simple citation data were assembled, describing mean citation counts for all articles by coded type. Weighting was employed in each of these analyses, as described above.

Topic Analysis

Latent Dirichlet Allocation (LDA) was originally developed as an unsupervised topic modeling technique concerning the probability distribution of keywords over topics. Working on the assumption that each word can represent part of the semantic meaning of a document, and that no inherent ordering function exists between words and documents in a corpus, David Blei, Andrew Ng, and Michael Jordan have suggested that LDA is particularly helpful in regard to the "classification, novelty detection, summarization, and similarity and relevance judgment" of large-scale data.[32] Based on a hierarchical Bayesian model, LDA characterizes each topic by a probability distribution of each word under each topic. For this paper, the outcome of the topic model is the probability distribution of each word in a given topic, using words from the titles of the articles. The higher the probability of a word in a topic indicates the higher extent that the word is representative of the topic. In essence, the topics are composed of words, and the probability value describes how closely associated the topic is with that word. Keywords were drawn from article titles and those that were most dominant (that is, the ten with the highest probability of occurring within the topic) were selected. Choosing the number of topics requires interplay between the output of the results and knowledge of the domain. The objective is to find topics that are exclusive and interpretable: too few topics and the organization is too general, too many and a unifying theme among the words is not easily discernible. For this analysis, we ran LDA to yield 4, 5, 6, 7, 8, 9, and

10 topics. The results with six topics were most coherent and yielded the highest face validity. Topic labels are constructed by a subjective analysis of the most dominant words.

Limitations

Coding was done at a macro level—library vs. non-library and collaborations between library and non-library individuals. The types of libraries and the affiliations of those who were not in a library were not investigated. It is fair to mention that it is not uncommon for librarians to teach courses in a library school setting, in addition to their other duties. While this is true, it may be assumed that, being employed by a library, such an individual would still be subject to the time demands of other librarians. While perusal of the data suggests that most non-practitioners were academics (instructional faculty and doctoral students in LIS programs), these data were not systematically gathered, as the paper focused on the two binary categories of practitioner and non-practitioner.

Results

Authorship Trends

Non-librarian-authored journal articles constituted 67 percent of the sampled journal articles, while librarian-authored journal articles made up 31 percent (Table 1). Please note that the number of publications and citations reported here is counted with weights based on journal publishing frequency. The same statistics of journals without weighting by publishing frequency can be found in Appendix B. Fewer than three percent of articles were written collaboratively between librarian and non-librarian authors. Articles written by non-librarians were found to have been cited 9.4 times on average. This is nearly three times as often as articles authored solely by librarians, which averaged 3.5 citations per article. Collaborative articles between librarian and non-librarian authors were cited twice as often than those articles written solely by librarians. The citations to papers of Type 1 and Type 3 were significantly different at the .01 level. All twenty journals featured articles written solely by librarians, as well as articles authored solely by non-librarians. Four journals did not have an instance of collaboratively written articles (*Libraries & Culture*; *Library Collections, Acquisitions, & Technical Services*; *Journal of the Medical Library Association*; and *Journal of Information Science*).

Collaborative articles between librarian and non-librarian authors were cited twice as often than those articles written solely by librarians.

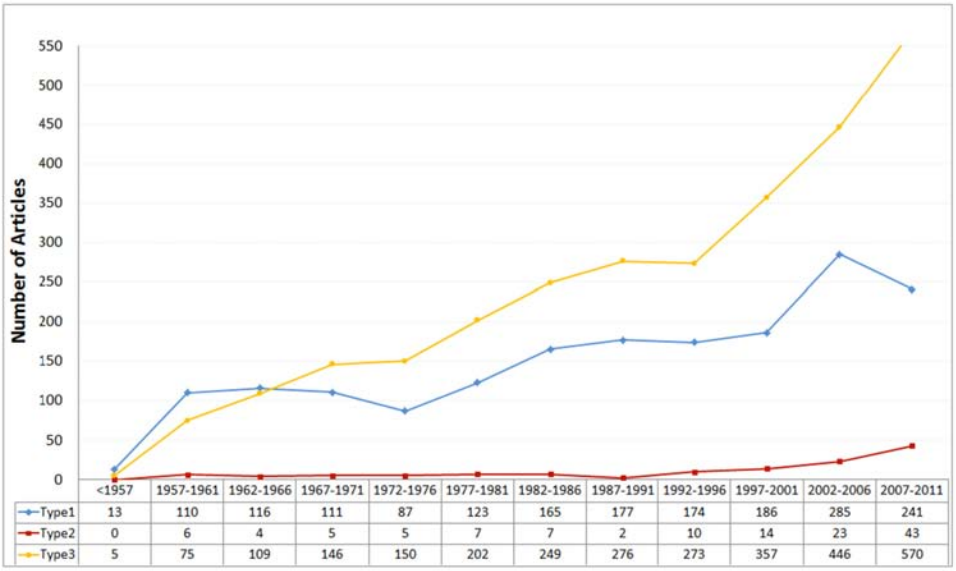
A decrease in the number of overall journal articles and proportion of the overall literature authored by librarians (Type 1) was observed between 2002 and 2011 (Figure 1). Between 2002 and 2006, the number of articles authored by librarians decreased by ten percent. During this period, the number of journal articles authored by non-librarians increased by twenty percent. The number of collaboratively authored journal articles nearly doubled, from 26 to 47. Proportionally, the percentage of overall articles authored by librarians was found to have decreased by just over 7 percent during the same period,

Table 1.

Distribution and mean citation of articles by type (weighted by publishing frequency).

	Description	#Articles	% of total	#Total Cites	Mean Cites/ article	#journals
Type 1	Librarian	2077.5	31.2%	7334	3.5	20
Type 2	Collaborative	156	2.3%	1132	7.3	16
Type 3	Non-librarian	4427.5	66.5%	41485	9.4	20

Note: weighted result



	<1957	1957-1961	1962-1966	1967-1971	1972-1976	1977-1981	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
Type1	13	110	116	111	87	123	165	177	174	186	285	241
Type2	0	6	4	5	5	7	7	2	10	14	23	43
Type3	5	75	109	146	150	202	249	276	273	357	446	570

Figure 1. Number of articles by author classification, 1956-2011 (weighted by publishing frequency)

from 31 percent to 24 percent. The distribution of corresponding increase for Type 2 and 3 articles was 1.5 percent and 5.4 percent, respectively.

The data were also examined according to individual journals, revealing a varied spectrum of author demographics within LIS (Figure 3). Of the twenty journals selected, seven could be considered librarian journals, with more than fifty percent of the articles written by librarians (Table 2). *Library Trends* had the most balanced distribution, with 246 Type 1 (librarian) articles, 249 Type 3 (non-librarian) articles, and 11 Type 2 (collaborative) articles. The journals with the largest proportion of non-librarian authors were seemingly less diverse than those with the largest proportion of librarian authors (Table 2).

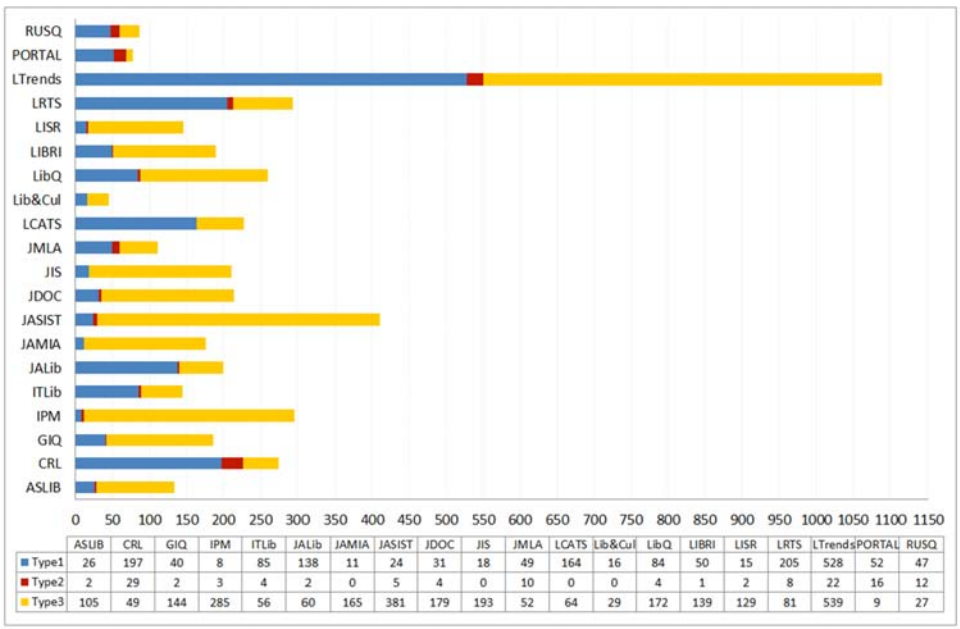
Table 2.

Top six journals for highest percentage librarian and highest percentage non-librarian authors.

Librarian-focused journals	Percentage of librarian authors	Non-librarian-focused journals	Percentage non-librarian
CRL	71.6	*IPM*	96.2
LRTS	69.7	*JASIST*	94.4
JALib	69.0	*JAMIA*	92.1
Portal	67.5	*JIS*	91.4
ITLib	58.6	*LISR*	88.3
RUSQ	54.6	*JDOC*	81.3

Four journals (*Information Processing and Management*, *JASIST*, *Journal of the American Medical Informatics Association*, and the *Journal of Information Science*) contained less than ten percent of Type 1 (librarian) articles.

The number of articles by each author type, by journal, is provided in Figure 2.



	ASLIB	CRL	GIQ	IPM	ITLib	JALib	JAMIA	JASIST	JDOC	JIS	JMLA	LCATS	Lib&Cul	LibQ	LIBRI	LISR	LRTS	LTrends	PORTAL	RUSQ
Type1	26	197	40	8	85	138	11	24	31	18	49	164	16	84	50	15	205	528	52	47
Type2	2	29	2	3	4	2	0	5	4	0	10	0	0	4	1	2	8	22	16	12
Type3	105	49	144	285	56	60	165	381	179	193	52	64	29	172	139	129	81	539	9	27

Figure 2. Authorship composition of all journals (weighted by publishing frequency).

Topical trends

Epistemic communities are defined by a degree of topical coherence. Therefore, we wanted to examine not only whether journals varied by author type, but whether the topics varied by author type. To this end, we applied LDA to analyze the topics of the Type 1 and Type 3 articles (Type 2 articles were not included in this analysis due to the small number). The results provide six topics that define the literature for each analyzed type. Topics are defined by words that frequently occur in each area. Table 3 provides the six dominant topics generated for the librarian-authored papers, labeled as (1) government information, (2) reference and information services, (3) collections and publishing, (4) medical librarianship, (5) technical services, and (6) academic libraries and librarianship.

Table 4 presents the results of the dominant topics for non-librarian-authored articles. The topics for non-librarian-authored papers may generally be categorized as (1) information retrieval, (2) academic libraries, (3) health informatics, (4) government information policy, (5) public libraries and librarianship, and (6) and information seeking and behavior.

Type 1 and Type 3 papers share a focus on government information policy and academic librarianship, and both categories contain a topic with an evident focus on medicine. Librarian-authored journal articles feature a greater emphasis on library services, while non-librarian-authored journal articles display a focus on information seeking, use, retrieval, and informatics.

Discussion

The decrease in the number of librarian-authored journal articles is notable. The long-term data show that while there were slight decreases in the number of Type 1 articles from 1962 to 1976, and again from 1987 to 1996, the data showed a gradual and consistent increase in librarian production of articles. The single largest increase in the number of librarian-authored journal articles (1997 to 2006) was followed by a sharp decline in the following five years. The number of Type 3 articles has shown a steady increase of approximately 25 percent per 5-year period for the last twenty years, outpacing the longitudinal increase in Type 1 articles. Prior to the recent decrease, the percentage of the literature contributed by librarians had remained rather steady, around 35 percent, since 1972. The lone exception was a brief decrease between the 5-year periods beginning in 1992 and 1997, and that dip decrease followed by an equal increase in the following time period. Interestingly, this increase corresponds with the time period during which Wiberly, Hurd, and Weller documented a decline in the proportion of journal articles written by academic librarians.[33]

The recent decrease in librarian-authored articles may simply be an anomaly, to be reversed over time. However, it may also suggest systematic changes in the scholarly communication practices within the field. A possible explanation for such a migration is that the advent of blogging and social media has connected librarians and opened up new channels for the dissemination of service-oriented literature. Such conduits allow librarians to circumvent the peer-review process and the delay between submission and publication that it demands. In noting the explosive growth of library blogs, Isaac Gilman quoted a librarian blogger who wrote that:

> Libraries are largely dependent on and are competing with technologies that change every nine months. How are we supposed to progress as a profession when it still takes a year and a half for an article to progress from submission to publication?[34]

Recall the studies by Mitchell and Reichel and Mitchell and Swieszkowski, which found that librarians are gaining tenure without publishing, whether through substituting service or by having the publication requirement waived entirely.[35] If librarians do not feel the same pressure to publish as instructional faculty do, and if librarians are indeed migrating to blogging, it might explain the decrease in authorship documented by Wiberly, Hurd, and Weller. Indeed, the rapid growth of the blogosphere after 2001 has been documented and falls within the timeframe of Wiberly, Hurd, and Weller's 2006 study.[36] Noa Aharony's research supports this explanation, with evidence that librarians tend to write essay-like posts, and that their blog tags fit into larger categorization systems, according to subject.[37] In other words, librarian bloggers are not simply keeping personal blogs, but rather are writing about specific research topics. It is also interesting to note that blogs created by librarians independently of their parent institution tend to cluster together in a community of interlinked blogs, while blogs published by academic institutions tend to be more isolated.[38]

While the extent of a hypothesized migration to blogging is as yet undetermined, there is already a divide among librarians in regard to whether blogging should count toward tenure, as well as to whether blogging should be considered publishing or a public service.[39] This divide seems to align along an age gap, with younger librarians responding positively that blogs should count toward publishing requirements for tenure, and more senior librarians rejecting the idea. Nevertheless, relatively few librarians are willing to publish in non-traditional outlets, given the difficulty of establishing a robust tenure portfolio without publications in peer-reviewed journals and monographs.[40]

In any case, if present trends continue, it may be expected that librarians will contribute less than twenty percent of the scholarly literature in LIS by the end of this decade. It is also interesting to note the parallel to S. Craig Finlay and others' finding that libraries are no longer a primary focus in LIS dissertations, raising the possibility of a connection between the two.[41] Further, faculty status of librarians is currently in a state of flux, with some universities choosing to strip librarians of faculty status all together.[42] If this becomes a trend, expect to see librarian contributions to the literature to further decrease.

While the proportion of librarian authors is declining, both members of the ALA and ASIST still most often read journals predominantly authored by librarians.

It is interesting to examine these results in the context of previous research. Ronald Powell, Lynda Baker, and Joseph Mika found that, among ALA members, the most read journals were *College & Research Libraries, Public Libraries, Reference & User Services Quarterly, Library Resources & Technical Services,* and *Information Technology & Libraries*.[43] While *Public Libraries* was excluded from our study, these journals were found to be predominantly authored by librarians. Among members of the American Society for Information Science & Technology (ASIST), the most read journals were *Journal of the American Society for Information Science & Technology* (ASIST),

Table 3.

LDA results for librarian-authored journal articles.

Government information		Reference and information services		Collections and publishing		Medical librarianship		Technical services		Academic libraries and librarianship	
Word	Load	Word	Load	Word	Load	Word	Load	Word	Load	Word	Load
information	0.0232	library	0.0201	library	0.0371	library	0.0209	catalog	0.0228	academic	0.0321
libraries	0.0190	reference	0.0193	information	0.0098	university	0.0136	collection	0.0201	library	0.0242
national	0.0121	information	0.0148	public	0.0085	health	0.0136	library	0.0201	reference	0.0193
public	0.0053	online	0.0143	book	0.0085	academic	0.0131	online	0.0143		0.0148
scientific	0.0048	web	0.0089	services	0.0085	electronic	0.0131	access	0.0080		0.0094
government	0.0048	literacy	0.0084	develop	0.0078	information	0.0115	digital	0.0080	faculty	0.0089
access	0.0048	service	0.0084	collections	0.0075	medical	0.0115	book	0.0074	web	0.0089
policy	0.0048	system	0.0074	publishing	0.0072	state	0.0094		0.0059	literacy	0.0084
science	0.0048	catalog	0.0074	trends	0.0059	impact	0.0089	oclc	0.0059	service	0.0084
federal	0.0043	instruction	0.0074	collection	0.0052	case	0.0079	academic	0.0059	librarian	0.0084

Table 4.

LDA results for non-librarian-authored journal articles.

Information retrieval		Academic libraries		Health informatics		Govt. information policy		Public libraries		Info. seeking and behavior	
Word	Load	Word	Load	Word	Load	Word	Load	Word	Load	Word	Load
		library		health		information	0.0558	library		information	0.0370
retrieval		academic				web	0.0094			research	0.0295
systems		education		data			0.0089	research		library	0.0154
search		online		medical		government	0.0086	services		science	0.0065
citation		information		clinical		analysis	0.0083	public		social	0.0062
scientific		study		system		policy	0.0077	librarian		knowledge	0.0059
document		collection		impact		technology	0.0077	publishing		factors	0.0059
text				electronic		public	0.0074			seeking	0.0059
approach		survey		case		digital	0.0071	media		community	0.0056
indexing		evaluation		model		internet	0.0071	book		case	0.0051

Information Outlook (IO), College & Research Libraries, Information Technology & Libraries, and *Journal of Academic Librarianship*. Of these, with the exception of *IO* (which was not included in this study), only *JASIST* was shown to be predominantly authored by non-librarians. While the proportion of librarian authors is declining, both members of the ALA and ASIST still most often read journals predominantly authored by librarians.

Of further interest in this regard is the documentation of markedly lower citation counts associated with librarian-authored journal articles. This is likely due, in part, to the shorter references lists present in librarian-authored research.[44] Despite these lower citation counts, a concern to the study was whether the loss of librarian-authored peer-reviewed research would noticeably alter content of the literature. The results of the LDA analysis yield an uncertain response. At the level of six topics, three were found to be similar, and three were found to be non-similar. The differences may be described as indicative of a library science/information science divide. Whereas Type 1 articles displayed a focus on government scientific policy and science librarianship, the Type 3 articles displayed a focus on government information policy—similar topic areas, but different perspectives on these areas. Similarly, a focus on medical librarianship on the part of librarians was mirrored in the non-librarian-authored research as a focus on health informatics. Finally, a focus on online public access catalogs has a sibling topic of information retrieval. The other three topics were not quite as similar, leading to the conclusion that a loss of librarian authors would in fact alter the content of the literature. These findings are reinforced by other recent bibliometric analyses, demonstrating the decline in library-related topics in the literature.[45]

Conclusion

A decline in librarian-authored research, coupled with significant differences in the topics of librarian-authored research suggests that the character of LIS literature is likely to change in the near future, if present decline in librarian-authored research continues. The apparent disengagement of librarians from the traditional channels of scholarly communication will necessarily decrease librarians' familiarity with scholarly communication, and this in turn may affect how librarians, especially those employed at academic institutions, interact with students and academics who are conducting research. We might assume that this decrease will engender a shift in topicality away from library services. This would no doubt have important pedagogical implications for students and academics alike in the nation's MLS programs, as students may find themselves in the care of academics whose collective research in-

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terests infrequently extend to the very field they are seeking to enter. Of course, whether the current trend is destined to continue, no one can yet tell. Those who believe that librarianship benefits from published research conducted by its practitioners will no doubt hope that it does not.

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Appendix A

Journals selected from Nisonger and Davis study (listed alphabetically) with publication frequency

Journal name	ARL Directors rank	LIS Deans rank	Publishing frequency
ASLIB Proceedings	16	21	bi-monthly
College & Research Libraries	1	11	bi-monthly
Government Information Quarterly	14	25	quarterly
Information Processing & Management	41	7	bi-monthly
Information Technology and Libraries	10	25	quarterly
Journal of Academic Librarianship	3	7	bi-monthly
Journal of Documentation	20	5	bi-monthly
Journal of Information Science	26	17	monthly.
Journal of the American Medical Informatics Association	44	19	bi-monthly
Journal of the American Society for Information Science and Technology	7	1	monthly
Journal of the Medical Library Association	15	14	quarterly
Libraries & Culture	24	13	quarterly
Library & Information Science Research	20	3	quarterly
Library Collections, Acquisitions, & Technical Services	9	39	quarterly
Library Quarterly	4	1	quarterly
Library Resources & Technical Services	6	15	quarterly
Library Trends	2	6	quarterly
Libri	17	17	quarterly
portal: Libraries and the Academy	n/a	n/a	quarterly
Reference & User Services Quarterly	5	10	quarterly

Appendix B. Unweighted results.

Distribution and mean citation of articles by type (without weights)

Code	Description	#Articles	% of total	#Total Cites	Mean Cites/article	#journals
Type 1	Librarian	1788	37.5%	5722	3.2	20
Type 2	Collaborative	126	2.6%	636	5.0	16
Type 3	Non-librarian	2858	59.9%	22975	8.0	20

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